UNITED STATES PATENT AND TRADEMARK OFFICE

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10/685,472	10/16/2003	Ashvinkumar Jayantilal Sanghvi	MFCP.107184	5440

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EXAMINER
GOODCHILD, WILLIAM J

ART UNIT	PAPER NUMBER
2145	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	**Applicant(s)**
Office Action Summary	10/685,472	SANGHVI, ASHVINKUMAR JAYANTILAL
	Examiner	**Art Unit**
	WILLIAM J. GOODCHILD	2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 June 2008</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-44</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-44</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

2.   Claims 1-43 are rejected under 35 U.S.C. 102(e) as being anticipated by McGee

et al., (International Publication No. WO 03/009140), (hereinafter McGee).

Regarding claim 1, McGee discloses creating a signature representative of the process

[paragraph 37];

continuously updating the created signature [paragraphs 13 and 33]; and

detecting abnormalities based upon the continuously updated signature [paragraphs 13

and 32];

wherein the process is related to usage of networked computing devices in a datacenter

[paragraph 30]; and

wherein the signature includes information related to time sensitive averaging that

accounts for variation in a business cycle [paragraphs 12 and 41].

Regarding claim 2, McGee further discloses creating a signature comprises calculating an average and a standard deviation [paragraphs 40 and 48].

Regarding claim 3, McGee further discloses creating a signature comprises accelerated learning through incrementally increasing a learning responsiveness ratio [paragraph 40].

Regarding claim 4, McGee further discloses creating a signature comprises initially repeating a running average and standard deviation through a plurality of intervals [paragraphs 40-44].

Regarding claim 5, McGee further discloses updating the created signature comprises using a weighting factor to ensure that recently recorded data has a greater impact than older data [paragraph 48].

Regarding claim 6, McGee further discloses updating the created signature comprises utilizing a moving average over a time to account for events occurring at unexpected times [paragraph 48].

Regarding claim 7, McGee further discloses detecting abnormalities comprises determining if measured values are above an upper threshold or below a lower threshold [paragraphs 46, 48 and 103].

Regarding claim 8, McGee further discloses calculating upper and lower threshold limits based on jitter offset [paragraph 48].

Regarding claim 9, McGee further discloses a computer readable medium having computer executable instructions for performing the method of claim 1 [paragraphs 3-4 and 22].

Regarding claim 10, McGee further discloses continuously monitoring a system parameter [paragraphs 13 and 33];

computing a normal range of values for the system parameter based on the continuously updated signature [paragraphs 14 and 17];

determining if the monitored system parameter is within the normal range [paragraph 40]; and

indicating existence of an abnormality if the monitored system parameter is outside of the normal range [paragraphs 13, 32 and 40];

wherein the process is related to usage of networked computing devices in a datacenter [paragraph 30].

Regarding claim 11, McGee further discloses creating a signature by calculating an average and a standard deviation [paragraphs 40 and 48].

Regarding claim 12, McGee further discloses creating a signature comprises accelerated learning through incrementally increasing a learning responsiveness ratio [paragraph 40].

Regarding claim 13, McGee further discloses creating a signature comprises initially repeating the running average and standard deviation through a plurality of intervals [paragraphs 40-44].

Regarding claim 14, McGee further discloses computing a normal range of values comprises using a weighting factor to ensure that recently recorded data has a greater impact than older data [paragraph 48].

Regarding claim 15, McGee further discloses computing a normal range of values comprises utilizing a moving average over a time to account for events occurring at unexpected times [paragraph 48].

Regarding claim 16, McGee further discloses determining whether a monitored system parameter is within a normal range of values comprises determining if monitored system parameters are above an upper threshold or below a lower threshold [paragraphs 46, 48 and 103].

Regarding claim 17, McGee further discloses calculating upper and lower threshold

limits based on jitter offset [paragraph 48].

Regarding claim 18, McGee further discloses a computer readable medium having computer executable instructions for performing the method of claim 10 [paragraphs 3-4 and 22].

Regarding claim 19, McGee further discloses setting a learning responsiveness ratio [paragraph 38];

monitoring a system parameter [paragraph 33];

adjusting the learning responsiveness ratio at fixed intervals until a desired value is reached [paragraphs 40 and 48];

calculating an average and standard deviation for each interval [paragraph 48];

using the average, standard deviation and learning responsiveness ratio to create the signature [paragraphs 40-48];

wherein the abnormalities in the computing system environment relate to usage of networked computing devices in a datacenter [paragraph 30]; and

wherein the signature includes information related to time sensitive averaging that accounts for variation in a business cycle [paragraphs 12 and 41].

Regarding claim 20, McGee further discloses continuously updating the created signature [paragraphs 13 and 33].

Regarding claim 21, McGee further discloses detecting abnormalities based on the updated signature [paragraphs 13 and 32].

Regarding claim 22, McGee further discloses creating a signature comprises initially repeating the running average and standard deviation through a plurality of intervals [paragraphs 40-44].

Regarding claim 23, McGee further discloses updating the created signature comprises using a weighting factor to ensure that recently recorded data has a greater impact than older data [paragraph 48].

Regarding claim 24, McGee further discloses updating the created signature comprises utilizing a moving average over a time to account for events occurring at unexpected times [paragraph 48].

Regarding claim 25, McGee further discloses detecting abnormalities comprises determining if measured values are above an upper threshold or below a lower threshold [paragraphs 46, 48 and 103].

Regarding claim 26, McGee further discloses calculating upper and lower threshold limits based on jitter offset [paragraph 48].

Regarding claim 27, McGee further discloses a computer readable medium having computer executable instructions for performing the method of claim 19 [paragraphs 3-4 and 22].

Regarding claim 28, McGee further discloses monitoring tools for continuously monitoring a system parameter [paragraph 33];

a continuously updated signature representative of normal values of the system parameter [paragraphs 13 and 33]; and

an abnormality indicator calculated based on the continuously updated signature, the abnormality indicator including a range of normal values for the system parameter [paragraphs 30 and 48];

wherein the abnormal activity is related to abnormal usage of networked computing devices in a datacenter [paragraph 30];

wherein the signature includes information related to time sensitive averaging that accounts for variation in a business cycle [paragraphs 12 and 41].

Regarding claim 29, McGee further discloses the continuously updated signature comprises an average and a standard deviation [paragraphs 40 and 48].

Regarding claim 30, McGee further discloses the continuously updated signature comprises a weighting factor to ensure that recently recorded data has a greater impact than older data [paragraph 48].

Regarding claim 31, McGee further discloses the continuously updated signature comprises a moving average over time to account for events occurring at unexpected times [paragraph 48].

Regarding claim 32, McGee further discloses the abnormality indicator determines whether a monitored system parameter is within a normal range of values and whether monitored system parameters are above an upper threshold or below a lower threshold [paragraphs 46, 48 and 103].

Regarding claim 33, McGee further discloses the abnormality indicator calculates upper and lower threshold limits based on jitter offset [paragraph 48].

Regarding claim 34, McGee further discloses a signature creation module for creating a signature representative of the process [paragraph 37];
a signature updating module for continuously updating the created signature [paragraphs 13 and 33]; and
an abnormality detection module for detecting abnormalities based upon deviations from the updated signature [paragraphs 13 and 32];
wherein the process is related to usage of networked computing devices in a datacenter [paragraph 30]; and

wherein the signature includes information related to time sensitive averaging that accounts for variation in a business cycle [paragraphs 12 and 41].

Regarding claim 35, McGee further discloses the signature creation module includes tools for calculating an average and a standard deviation [paragraphs 40 and 48].

Regarding claim 36, McGee further discloses the signature creation module comprises tools for performing accelerated learning through incrementally increasing a learning responsiveness ratio [paragraph 40].

Regarding claim 37, McGee further discloses creating a signature comprises initially repeating the running average and standard deviation through a plurality of intervals [paragraphs 40-44].

Regarding claim 38, McGee further discloses the signature updating module comprises a weighting factor to ensure that recently recorded data has a greater impact than older data [paragraph 48].

Regarding claim 39, McGee further discloses the signature updating module comprises tools for calculating a moving average over a time to account for events occurring at unexpected times [paragraph 48].

Regarding claim 40, McGee further discloses the abnormality detection module
determines if monitored system parameters are above an upper threshold or below a
lower threshold [paragraphs 46, 48 and 103].

Regarding claim 41, McGee further discloses the abnormality detection module includes
a mechanism for calculating upper and lower threshold limits based on jitter offset
[paragraph 48].

Regarding claim 42, McGee further discloses monitoring a system parameter
[paragraphs 13 and 33];

converting a numeric data stream representative of the monitored system parameter to
a state for the process [paragraphs 37]; and

distinguishing between normal and abnormal behavior based on the state [paragraphs
13 and 32];

wherein the process is related to usage of networked computing devices in a datacenter
[paragraph 30];

wherein the system parameter includes at least one of a usage variable, utilization, an
error, and turn around time [paragraphs 30 and 32], and

wherein distinguishing between normal and abnormal behavior includes utilizing time
sensitive averaging to account for variation in a business cycle [paragraphs 12 and 41].

Regarding claim 43, McGee further discloses converting the numeric data streams to

multiple sub-states [paragraphs 44-45].

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over McGee

as applied to claim 42 above, and further in view of Spoerre et al., (US Patent No.

5,602,761), (hereinafter Spoerre).

Regarding claim 44, McGee does not specifically disclose determining a root cause of

an abnormality based on the state. However, Spoerre, discloses a reasoning process in

identifying faults and their possibilities [Spoerre, column 6, lines 57-65]. It would have

been obvious to one having ordinary skill in the art at the time the invention was made

to include determining the reasons for a fault in order to increase the usefulness of the

system.

Response to Arguments

5.   Applicant's arguments with respect to claims 1-44 have been considered but are

moot in view of the new ground(s) of rejection.

Conclusion

Examiner's Note: Examiner has cited particular paragraphs / columns and line numbers

in the reference(s) applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are

applied to specific limitations within the individual claim, other passages and figures

may apply as well. It is respectfully requested from the applicant in preparing

responses, to fully consider the references in entirety as potentially teaching all or part

of the claimed invention, as well as the context of the cited passages as taught by the

prior art or relied upon by the examiner.

Should applicant amend the claims of the claimed invention, it is respectfully requested

that applicant clearly indicate the portion(s) of applicant's specification that support the

amended claim language for ascertaining the metes and bounds of applicant's claimed

invention

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to WILLIAM J. GOODCHILD whose telephone number is

(571)270-1589. The examiner can normally be reached on Monday - Friday / 8:00 AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on (571) 272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WJG

/Jason D Cardone/
Supervisory Patent Examiner, Art Unit 2145